

What is claimed is:

1. A semiconductor light emitting device comprising a base, a semiconductor light emitting element secured to the base, and a coating material for covering the semiconductor light emitting element,

5 wherein said coating material is a polymetaloxane or a ceramic having a light permeability.

2. A semiconductor light emitting device of claim 1, wherein said coating material is a glass formed mainly based on the metaloxane bond.

3. A semiconductor light emitting device of claim 1 ~~or 2~~, wherein said
10 coating material is a coating member in the gel state formed mainly based on the siloxane bond.

4. A semiconductor light emitting device of ~~any one of the claims 1 to 3~~,
wherein said coating material comprises a polymetaloxane formed from a metal alcoxide.

5. A semiconductor light emitting device of ~~any one of the claims 1 to 4~~,
15 wherein said coating material comprises a polymetaloxane formed by applying the sol-gel technique to a metal alcoxide.

6. A semiconductor light emitting device of ~~any one of the claims 1 to 5~~,
20 wherein said coating material comprises a polymetaloxane formed by hydrolyzing and polymerizing a metal alcoxide or a solution containing a metal alcoxide in accordance with the sol-gel technique.

7. A semiconductor light emitting device of claim 5 ~~or 6~~, wherein said metal alcoxide is of one or more type selected from a single-metal alcoxide, a two-metal alcoxide and a multi-metal alcoxide.

8. A semiconductor light emitting device of ~~any one of the claims 1 to 3~~,
25 wherein said coating material comprises a ceramic formed from a ceramic

precursor.

9. A semiconductor light emitting device of claim 8, wherein said ceramic precursor is a polysilazane.

10. A semiconductor light emitting device of ^{claim 1} ~~any one of the claims 1 to 3, 8 and 9~~, wherein said coating material comprises a ceramic formed by applying a heat treatment to a ceramic precursor.

11. A semiconductor light emitting device of ^{claim 1} ~~any one of the claims 1 to 9~~, wherein said coating material covers at least the top of said semiconductor light emitting element.

12. A semiconductor light emitting device of claim 11, wherein said coating material covers all the surfaces of said semiconductor light emitting element excluding the bottom surface thereof.

13. A semiconductor light emitting device of claim 1, wherein said base has a concavity filled with said coating material.

14. A semiconductor light emitting device of claim 1, wherein said base is an insulative substrate.

15. A semiconductor light emitting device of claim 1, wherein said base is a lead frame.

16. A semiconductor light emitting device of ^{claim 1} ~~any one of the claims 1 to 15~~, wherein said semiconductor light emitting element emits light at light wavelengths of 365 nm to 550 nm.

17. A semiconductor light emitting device of claim 16, wherein said semiconductor light emitting element comprises a gallium nitride compound semiconductor light emitting element.

18. A semiconductor light emitting device of ^{claim 1} ~~any one of the claims 1 to 3~~, wherein said semiconductor light emitting element is secured to said base

through an adhesive formed from a polymetaloxane or a ceramic.

19. A semiconductor light emitting device of claim 16, wherein said adhesive and said coating material are formed by using the same material.

20. A semiconductor light emitting device of ^{claim 1} ~~any one of the claims 1 to 19~~, wherein said coating material contains a fluorescent substance for receiving at least a part of the light projected from said semiconductor light emitting element to perform wavelength-conversion of the light.

21. A semiconductor light emitting device of claim 20, wherein said fluorescent substance absorbs at least a part of the light projected from said semiconductor light emitting element, and emits light having a wavelength longer than that of the light projected.

22. A semiconductor light emitting device of claim 20 ~~or 21~~, wherein the light projected from said semiconductor light emitting element is mixed with the light wavelength-converted by said fluorescent substance to release the mixed light out of said coating material.

23. A semiconductor light emitting device of ^{claim 1} ~~any one of the claims 1 to 22~~, wherein said coating material is covered with an encapsulant.

24. A semiconductor light emitting device of claim 23, wherein said encapsulant is formed of a plastic which contains a light scattering material or a binder.

25. A semiconductor light emitting device of claim 24, wherein the light projected from said semiconductor light emitting element permeates said coating material before being released to the outside of said encapsulant.

26. A semiconductor light emitting device of ^{claim 23} ~~any one of the claims 23 to 25~~, wherein said encapsulant is fitted into said concavity, and said coating

material is formed between the bottom surface of said concavity and said encapsulant.

27. A semiconductor light emitting device of claim 1, wherein a concavity is formed in one principal surface of an insulative substrate for constituting said base; said semiconductor light emitting element is secured to the bottom surface of the concavity; and a pair of electrodes in said semiconductor light emitting element is electrically connected to a pair of external terminals formed on the one principal surface of said insulative substrate.

28. A semiconductor light emitting device of claim 1, wherein a lead frame for constituting said base has a pair of external terminals; a concavity is formed in either of said external terminals; said semiconductor light emitting element is secured to the bottom surface of the concavity; and a pair of electrodes of said semiconductor light emitting element is electrically connected to said pair of external terminals.

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